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13 May 1959

**MEMORANDUM FOR THE RECORD**

**SUBJECT : Aircraft Door Modification, Power Assist**

**REFERENCE:** Memorandum for [REDACTED]

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1. A feasibility study for power operation of the inward opening cargo doors (C-54) has been conducted on a cursory basis and budgetary quotations submitted. A mechanical and electrical system were investigated.

2. The cost differential between an electrical vs. a mechanical system is approximately 3 to 1 for the prototype model. Programming is estimated at a minimum of three months for the electrical system and one month for the mechanical assist.

3. A meeting held on 29 April 1959 (Ref: Memorandum for the Record - DFD-2851-59 - [REDACTED]) between representatives of [REDACTED], [REDACTED] resulted in holding any electrical or mechanical assist program in abeyance due to the limited aircraft availability and necessary additional funds required.

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4. It was brought out during the 29 April meeting that a "Jury Rig" Mechanical assist could be readily installed in the field if necessary. The undersigned cautioned against such an approach on the grounds that unless a sound engineering approach is contemplated, a "Jury Rig" could create torsional forces not anticipated in the door design. However, a "Jury Rig" could probably be used on a very limited basis, keeping in mind the door tracking relationship of guide rollers, track, and roller brackets.

5. The existing prototype door, with proposed modifications, will be service tested for six (6) months to determine component wear and serviceability prior to fabrication of production models.

6. From the experience gained during the installation, it is recommended that future installation of the inward opening cargo doors be conducted by the contractor in this country. Initially it was conceived that the door modification be fabricated and issued in a kit form for field installation. Due to the complexity of the installation and personnel situation in the field the kit form approach is not feasible.

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7. A more positive emergency exit is desired for the prototype inward opening door system. Pursuant to the April 29 meeting with DFD, the overhead inward opening rear cargo door will be replaced with an outward opening hinged door. The hinged rear door will serve as the ground exit and entrance to the aircraft and will also serve as the emergency exit. The rear door will be designed for opening either inside or outside the aircraft. An emergency release mechanism will allow for inflight and ground jettison. The original cargo doors will be used for salvage parts and to aid in fabrication.

8. The aircraft is to be made available at Friendship Airport for installation of the emergency release rear door by 25 May or before. The estimated installation completion date has been set as 27 May 1959. (Correction to Memorandum DFD-3121-59/27 May 1959 - [redacted] paragraph 3 A). The aircraft availability period was coordinated with [redacted], by telephone.

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9. TSS/ED was requested verbally by DFD/OPS to investigate the feasibility of utilizing the sliding TWA door (TO-1C-121C-9) for inflight operation. Arrangements were made by DFD to visit National Airport (MATS) and examine the sliding door of a C-121. At present TSS/ED is having a feasibility study made.

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